ERA ATM SOLUTIONS

Surveillance – Multilateration and ADS-B
Air Traffic Management • UAS management
ATC applications
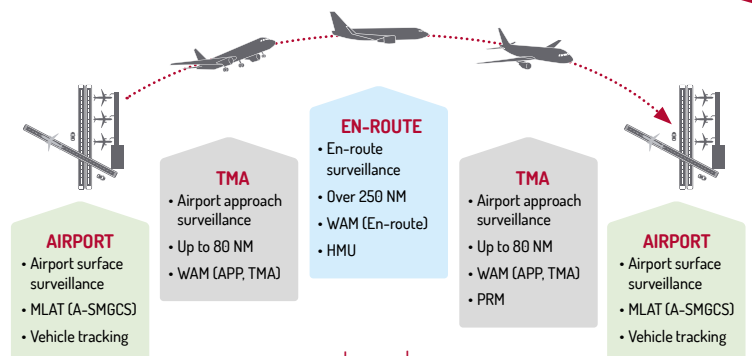
SURVEILLANCE SENSORS – MULTILATERATION AND ADS-B

MSS-5 – Multilateration Surveillance System

The latest version of verified and proven surveillance system with excellent performance tailored for Air Traffic Management/Air Traffic Control combining multilateration and ADS-B capability.

SQUID – Vehicle Tracking

The most widespread, self-contained vehicle tracking unit for improving airport safety by broadcasting the position of ground mobiles (ADS-B squitter using GNSS).

EN-ROUTE
- En-route surveillance
- Over 250 NM
- WAM (En-route)
- HMU

TMA
- Airport approach surveillance
- Up to 80 NM
- WAM (APP, TMA)

TMA
- Airport approach surveillance
- Up to 80 NM
- WAM (APP, TMA)
- PRM

AIRPORT
- Airport surface surveillance
- MLAT (A-SMGCS)
- Vehicle tracking

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Legend:

• **TMA** – Terminal Maneuvering Area • **A-SMGCS** – Advanced Surface Movement Guidance and Control System
• **WAM** – Wide Area Multilateration • **HMU** – Height Monitoring Unit • **PRM** – Precision Runway Monitoring
• **MLAT** – Surface Multilateration • **APP** - Approach

THE POWER OF SURVEILLANCE

MSS-5 – MULTILATERATION SURVEILLANCE SYSTEM

The 5th generation of composite multilateration and ADS-B system

MSS-5 is the 5th generation of the Multilateration Surveillance System (MSS) tailored for Air Traffic Management combining proven multilateration and ADS-B technologies. The system provides accurate real-time localization, tracking and identification of all objects equipped with transponder: at the airport surface, in TMA and en-route. The system withstands all weather conditions and is suitable for any terrain profiles.

FEATURES:

- 2020+ standards readiness
- Dual Station Data output: ASTERIX format and raw Mlat
- Expandable modular solution for flexible deployment, mast up or down
- All weather conditions - any climatic or terrain challenges
- Worldwide GNSS Synchronization (GPS, GLONASS, GALILEO, BEIDOU)

MSS-5 SOLUTIONS

Wide Area Multilateration

Surface Multilateration

Precision Runway Monitoring

Height Monitoring Unit

Automatic Dependent Surveillance - Broadcast

Picture: Fraport AG

SQUID – VEHICLE TRACKING SYSTEM

Squitter beacon broadcasting the position of airport mobiles

The ERA-designed vehicle tracking unit SQUID (squitter beacon SQB) provides airports with a tool to monitor and track all ground vehicles on an airport's surface. SQUID continuously broadcasts their exact position by using a vehicle-mounted squitter and thus improves airport safety. SQUID minimizes the risk of collisions between aircraft and service mobiles (fire and rescue vehicles, tugs, de-icing equipment etc.), especially during low visibility conditions.

SQUID SOLUTIONS

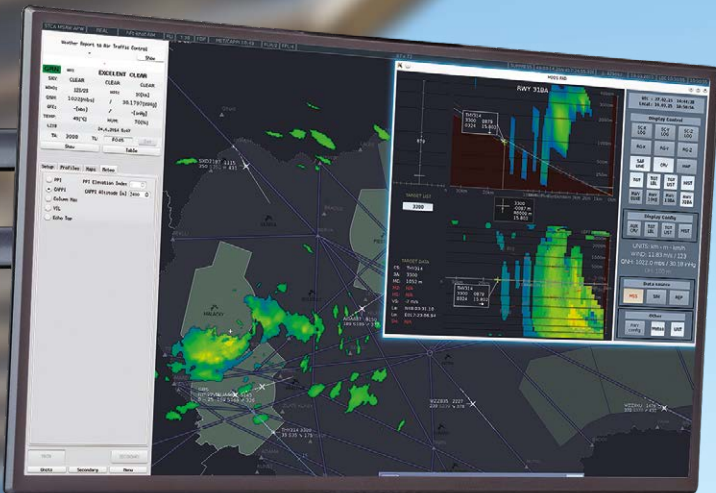Surface Multilateration   Vehicle Tracking System

FEATURES:

- Each vehicle is clearly and uniquely identified (vehicle position, unique 24-bit ICAO address, vehicle ID, emitter category, type code)
- Ensures easy integration and interoperability with any multilateration or ADS-B system based on Mode S Extended Squitter datalink
- Area management to define the boundaries where the units automatically turn on and off transmissions
- Readiness to operate with GALILEO satellite system

BENEFITS:

- ✔ Reduces incursion risk
- ✔ Fully automated unattended operation
- ✔ Small, lightweight and easy to install
- ✔ Low electromagnetic emissions , low power consumption
- ✔ Fully standards compliant (ICAO, ANNEX 10, Volume IV)

BEYOND THE SENSORS

MORE THAN SENSORS

ERIS – ERA Integrated Systems

ERIS is a family of systems designed for Air Traffic Management, Air Traffic Control at airports, flight planning and data analysis and communication management. It is modular and ATM standards compliant.

IXO – ATM and UTM integration

IXO – a complex solution for airspace users and providers; seamlessly integrates information of manned and unmanned aircraft operations.

Other products and services

3R – Record&Replay&InvestigatoR
Coverage Analysis Tools
Data Fusion and Data Displays

MasterCare – System Assurance Services
Consultancy/Training
Research & Development

MORE THAN SENSORS

ERIS – ERA INTEGRATED SYSTEMS

Modular SW applications for ATM and ATC

ERIS represents a product family of Air Traffic Management systems designed for Air Traffic Control and flight planning of civil (and military) operations.

ERIS family contains following products:

- **ERIS-A: Airport control system for surface movement control**
- **ERIS-ATM: Air Traffic Management for all types of ATC centres**
- **ERIS-DART: Data Analysis and Replay Tool**
- **ERIS-COMMS: Information System for Data Communication Management**

Air Traffic Management

FEATURES:

- Suited for En-route, Tower and Approach application
- Modular design with standard interfaces
- Central and dynamic configuration
- Follows ICAO, EUROCONTROL and EUROCAE standards and practices
- Designed for COTS technologies
- Linux or Windows operation system (depending on the product)

BENEFITS:

- Multi-level approach (Air Traffic Control/Management, Surveillance Data Evaluation and Advanced Data Distribution Capabilities)
- Scalable and expandable solution to fit the users' needs
- Intuitive and unified human-machine interface
- Easy-to-integrate and -maintain

IXO – THE FLIGHT AND DRONE ZONE PLANNER

Integration of manned and unmanned aerial traffic

IXO SYSTEM represents a comprehensive solution for airspace users and providers, that seamlessly integrates information on manned and unmanned aerial vehicle operations and provides real-time aeronautical information for all airspace users.

IXO SYSTEM incorporates modules required for flight planning, airspace conflict calculations, U-Space rules and principles, manned/unmanned aerial vehicle management, and aeronautical data provision.

Integrated ATM and UTM systems

FEATURES:

- Service oriented architecture
- Supports standards protocols based on SWIM principles
- Web and mobile applications support
- Smart layers concept (georeferenced data, over the map visualization)

BENEFITS:

- ✔ A single source of valid aeronautical data for all users
- ✔ UTM integration into existing ATM infrastructure
- ✔ White-labeled solution readily available to provide ANSP services
- ✔ Developed in close cooperation with ANSPs
- ✔ Rapid Time-to-Market deployment

WELCOME TO ERA WORLD

MORE THAN	IN	ON
160	**67**	**5**
INSTALLATIONS	COUNTRIES	CONTINENTS

Basic info on ERA:

ERA (a member of OMNIPOL group) is a leading company in multilateration, multistatic surveillance, and reconnaissance technology. Unrivalled experience in passive surveillance sensor development provides ERA with unique know-how to deliver comprehensive solutions for global markets. We develop, manufacture and implement mission-critical systems for military and civil purposes.

ERA made air traffic control history when deploying the first multilateration system and introducing gate-to-gate surveillance. ERA has brought to the world a novel passive medium range surveillance sensor category called Passive ESM Tracker (PET) for defence and electronic warfare purposes - which is today in its 5th generation known as VERA-NG - tailored for air, maritime and land target surveillance and reconnaissance. The company heritage and global experience in passive EMS/ELINT helped ERA introduce another category

of the Over the Horizon Direction Finding (OTH DF) long-range sensor, in its 2nd generation known as PLESS.

The above-mentioned sensors make possible a broad ecosystem consisting of sensor performance prediction and evaluation tools and data mining tools together with a full virtual EW scene simulator to help military intelligence.

Over the last 3 decades, ERA has reached a number of more than 160 installations, deployed in over 67 countries on 5 continents with 24/7 operations fulfilling demanding customer requirements. More important, however, than the given number of references is the experience we have achieved and lessons learnt during implementation of our solutions. We intend to continue introducing new technologies to adapt to tomorrow's challenges.

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